

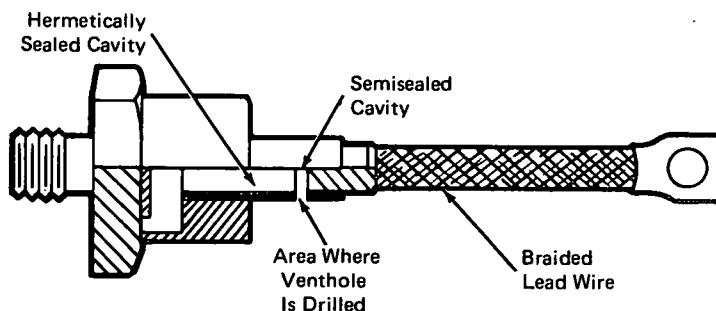
# NASA TECH BRIEF

## *Marshall Space Flight Center*



NASA Tech Briefs announce new technology derived from the U.S. space program. They are issued to encourage commercial application. Tech Briefs are available on a subscription basis from the National Technical Information Service, Springfield, Virginia 22151. Requests for individual copies or questions relating to the Tech Brief program may be directed to the Technology Utilization Office, NASA, Code KT, Washington, D.C. 20546.

### SRC Seal Testing



Fully Assembled SCR

#### The problem:

Fine leak testing of hermetic seals in fully assembled silicon-controlled rectifiers (SCR's) is inaccurate. The reason is that fully assembled SCR's have two cavities. One cavity is hermetically sealed, whereas the second cavity that encloses a braided lead wire is semisealed. Helium is frequently entrapped in the semisealed cavity; and, when the device is tested, it indicates a high background leak. Based on this leakage, SCR's with good hermetic seals are frequently rejected.

#### The solution:

A small venthole drilled in the semisealed SCR cavity eliminates the entrapped helium.

#### How it's done:

Helium is entrapped when the braided lead wire is installed into the SCR device to form a semisealed cavity (see figure). When the device is tested, some of this helium will be released, showing high leakage. Since the device is fully assembled before the test, a small hole must be drilled into the semisealed cavity to release the entrapped gas. Although these devices show a slightly greater leak than those before the lead installation, it is now possible to distinguish the device with a good hermetic seal from the defective one.

#### Note:

Requests for further information may be directed to:

Technology Utilization Officer  
Marshall Space Flight Center  
Code A&PS-TU  
Marshall Space Flight Center, Alabama 35812  
Reference: B73-10199

#### Patent status:

Inquiries concerning rights for the commercial use of this invention should be addressed to:

Patent Counsel  
Marshall Space Flight Center  
Code A&PS-PAT  
Marshall Space Flight Center, Alabama 35812

Source: E. D. Miller and  
G. J. Kohout of  
McDonnell Douglas Corp.  
under contract to  
Marshall Space Flight Center  
(MFS-22426)